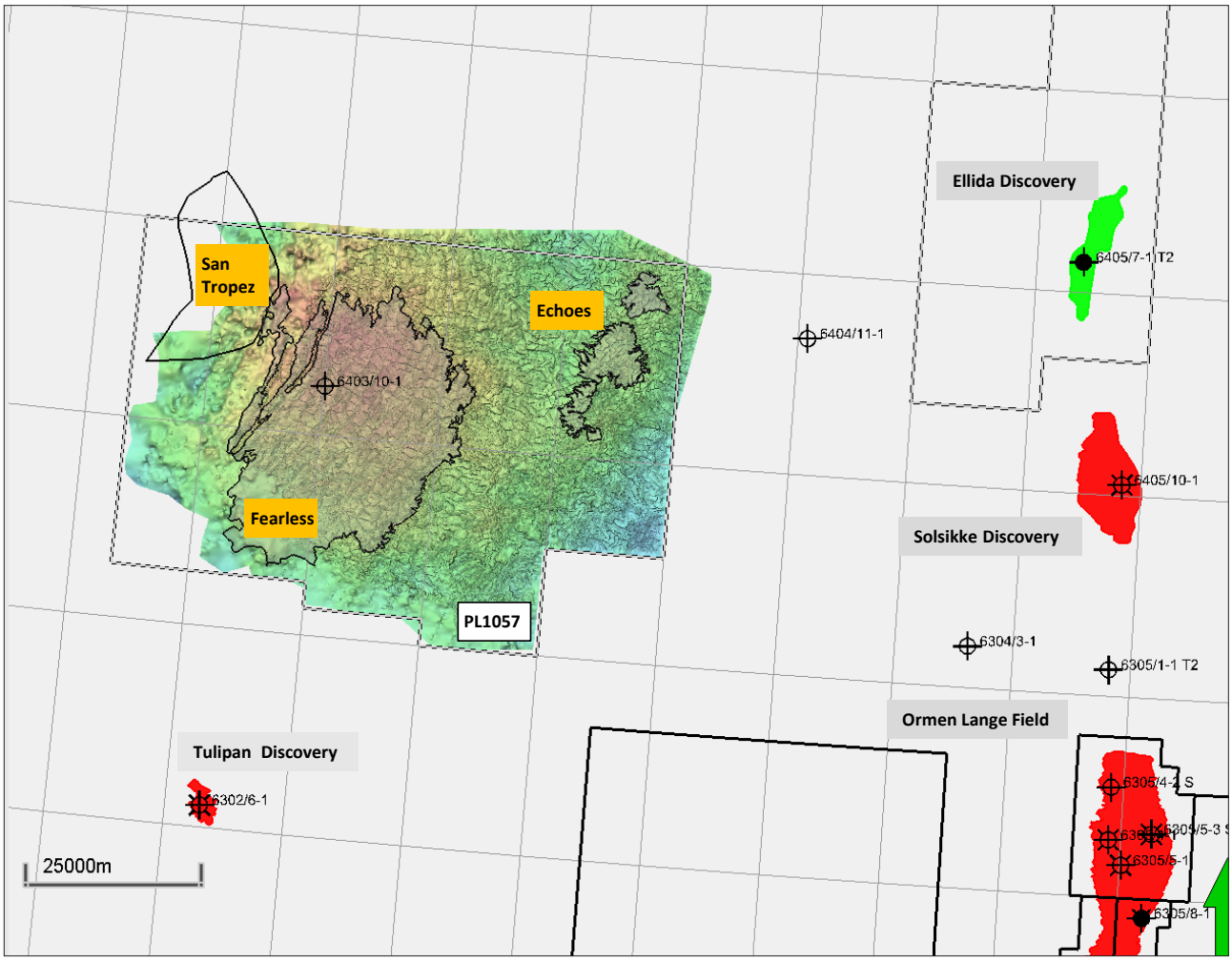
PL 1057
RELINQUISHMENT REPORT

April 2023



Partners:

1 License history

PL1057 was awarded on 14th February 2020 (following APA2019) and relinquished at the Drill-or-Drop decision deadline on 14th February 2023. The licence is situated in the Møre Basin in the Norwegian Sea.

General info:

- Date of award: 14.02.2020 (following APA 2019)
- Area: Parts of blocks 6302/2, 3, 6303/1, 2, 3, 6402/11, 12, 6403/10, 11 & 12. Total 3721 km^2
- Licensees at award: Capricorn Norge AS (70%, Operator) and Lundin Norway AS (30%)
- Licensees at relinquishment: Aker BP ASA (60%, Operator) and Sval Energi AS (40%)

Work commitments:

- Acquire new 3D seismic, G&G studies (Completed)
- Decide on drill or drop within 3 years (14.02.2023)
- Decide on concretisation (BOK) or Drop within 5 years
- Decide on continuation (BOV) or Drop within 7 years
- Submit PDO or Drop within 8 years

Extensions and area relinquishments:

- No license extension was applied for.
- Unanimous decision to relinquish the license area, relinquished as of 14.02.2023.

Formal Management and Exploration Committee Meetings:

- Management / Exploration Committee Meeting No 1 (26.03.2020)
- Management / Exploration Committee Meeting No 2 (17.11.2020)
- Management / Exploration Committee Meeting No 3 (22.11.2021)
- Management / Exploration Committee Meeting No 4 (28.10.2022)

Reasoning for surrender of license:

The PL1057 licence partners have not been able to identify an attractive drilling candidate in the licence. The main prospect and all leads in the license have been fully evaluated on the new 3D seismic data, however, the risks related to reservoir presence and quality and hydrocarbon source presence are found to be too high. The PL1057 partnership has therefore unanimously decided that there is no basis for a positive drill decision in PL1057.

2 Database

2.1 Seismic data

The common seismic database comprises a merged 3D dataset consisting of parts of the AMS18 and AMS20 surveys. Depth processing, target specific (re)processing of AMS18 and AMS20 across PL1057 created one merged volume in time and depth domain (AMS20 TGS20M04). The area of delivered licensed seismic 3D data was 3820 sqkm.

The merged seismic survey combined with 2D seismic data in the area has served as the main seismic database for the evaluation of the PL1057 licence (Fig. 2.1).

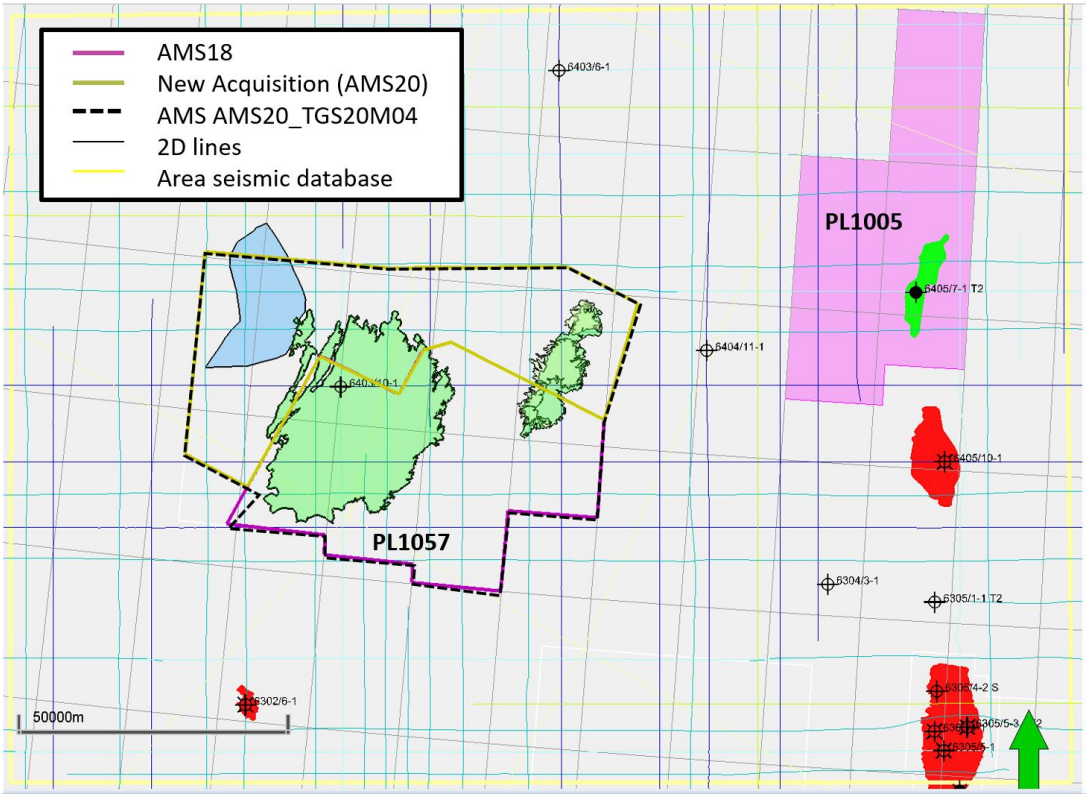


Fig. 2.1 Seismic database. *The merged seismic survey (AMS20_TGS20M04) combined with 2D seismic data in the area has served as the main seismic database for the evaluation of the PL1057 licence.*

Offset cubes and velocity field seismic cubes were included and a set of tailor-made cubes have been generated in-house. Main cubes applied in prospect- and discovery evaluation were the standard full fold, in addition to near, mid, farmid, far and ultrafar offset cubes. The seismic data used is shown in Table 2.1.

Table 2.1 Seismic Database

Survey/Volume Name	3D/2D	Processing	Acuisition Year	NPDID	Operator/ Owner	Data available	Domain
AMS20_TGS20M04_STK_VEL_AM20_T	3D	PSTM	2020	NA	TGS	Velocity	Velocity
AMS20_TGS20M04_FINAL_FULL_PRCMIG_AM20_T	3D	PSTM	2020	NA	TGS	Full/Near/Mid/FarMid/Far/ UFar	Time
AMS20_TGS20M04_D2TVEL_AM20_D	3D	PSDM	2020	NA	TGS	Velocity	Velocity

AMS20_TGS20M04_FINAL_FULL_PSDM_AM20_T	3D	PSDM	2020	NA	TGS	Full/Near/Mid/FarMid/Far/UFar	Time
AMS20_TGS20M04_FINAL_FULL_PSDM_AM20_D	3D	PSDM	2020	NA	TGS	Full/Near/Mid/FarMid/Far/UFar	Depth
GMNR94	2D	MigFin	1994	3650	OD	Full	Time
MNR05	2D	MigFin	2005	4298	Fugro	Full	Time
MNR07	2D	MigFin	2007	4450	Fugro	Full	Time
MNR08	2D	MigFin	2008	4571	Fugro	Full	Time
MNR09	2D	MigFin	2009	7001	Fugro	Full	Time

2.2 Well data

The PL1057 common well database is shown in Fig. 2.2 and Table 2.2.

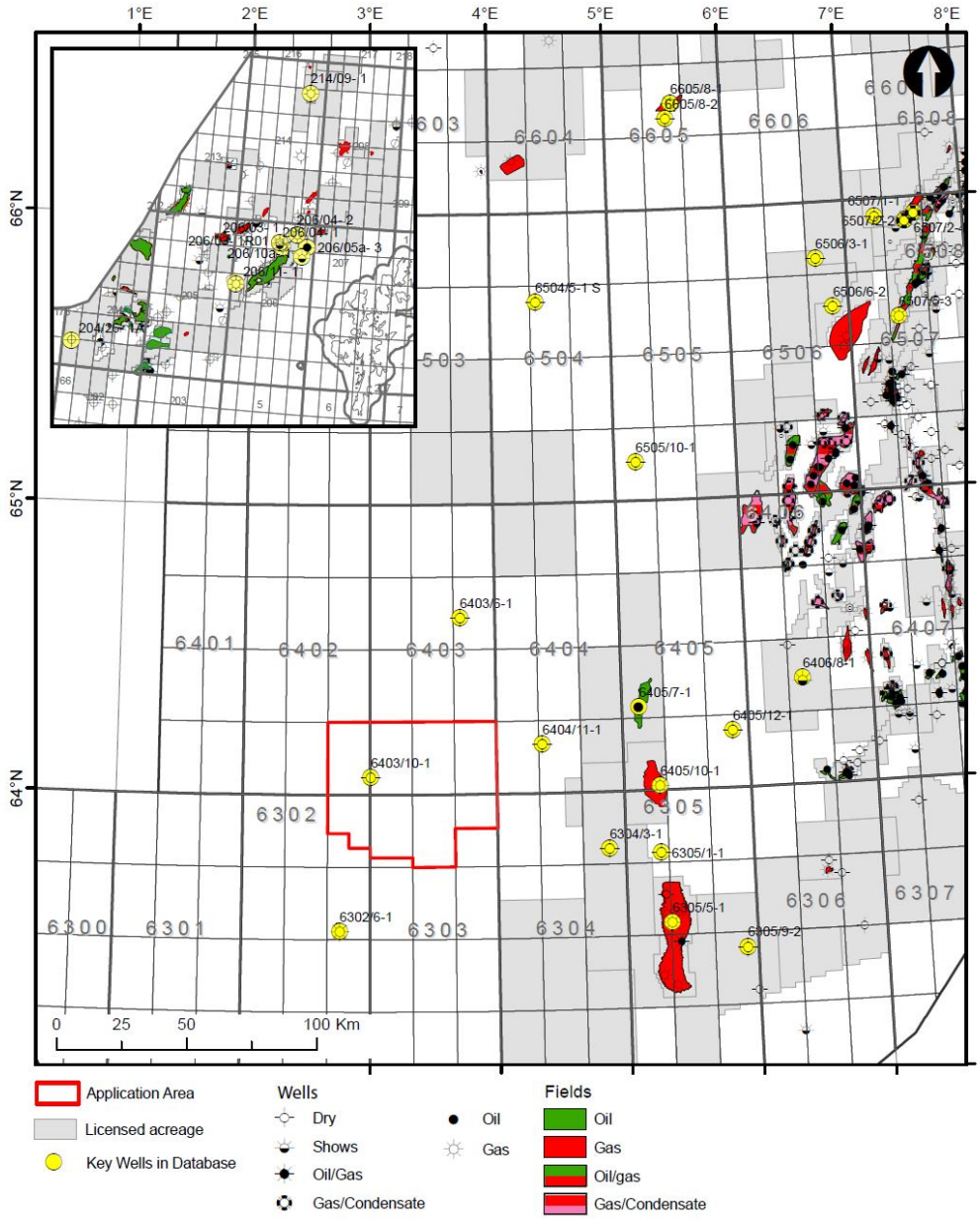


Fig. 2.2 Map view of wells in well database. *The well database is unchanged from the Capricorn 2019 APA application.*

Table 2.2 PL1057 common well database.

Wellbore name	Field/Discovery/ Prospect	Compl. year	NPDID	Waterdepth (m)	TD (m) TVD SS depth	TD Strat.	Content	HC level (Formation)	Drilling operator
6302/6-1	Tulipan	2007	5086	1261.00	4209	SPRINGAR FM	GAS DISCOVERY	TANG FM	Statoil ASA (old)
6305/1-1	Ormen Lange appraisal	1998	3555	839.50	4523	LYSING FM	DRY		Norsk Hydro Produksjon AS
6305/5-1	Ormen Lange	1997	3144	888.50	3026	NISE FM	GAS DISCOVERY	EGGA FM (INFORMAL)	Norsk Hydro Produksjon AS
6304/3-1	Coeus	2018	8497	1235.30	3608	NISE FM	DRY		A/S Norske Shell
6403/6-1	Edvarda	2006	5296	1721.00	4095	LYSING FM	DRY		Statoil ASA (old)
6403/10-1	Solsikke	2002	4602	1717.00	3375	NISE FM	DRY		Norsk Hydro Produksjon AS
6404/11-1	Havsule	2002	4465	1495.00	3625	NISE FM	DRY		BP Amoco Norge AS
6405/7-1	Ellida	2003	4749	1206.00	4163	LYSING FM	OIL DISCOVERY	NISE FM	Statoil ASA (old)
6405/10-1	Midnattsol	2007	5565	928.00	3159	NISE FM	GAS DISCOVERY	NISE FM	Statoil ASA (old)
6406/8-1	N/A	1988	1136	348.00	4873	ÅRE FM	DRY, WITH GAS SHOWS	ILE FM (shows)	Elf Petroleum Norge AS
6305/9-2	Dovregubben	2011	6502	274.00	3035	SPRINGAR	DRY		Det norske oljeselskap ASA
6405/12-1	Lindarormen	2015	7551	420.00	3305	NISE FM	DRY		Lundin Norway AS
6504/5-1 S	Gemini	2007	5518	1190.00	4169	LANGE FM	DRY		Eni Norge AS
6505/10-1	Helland Hansen	1998	3259	684.00	5002	LANGE FM	DRY		A/S Norske Shell
6506/3-1	Cassandra	2001	4344	341.00	3642	LANGE FM	DRY		Norsk Chevron AS
6506/6-2	Albert	2013	6960	408.00	3326	LANGE FM	DRY		Maersk Oil Norway AS
6507/1-1	Sahara	2004	4955	397.00	3720	LANGE FM	DRY		Chevron Texaco Norge AS
6507/2-2	Marulk	1992	1840	384.00	3935	LANGE FM	GAS COND DISCOVERY	1st level LYSING FM, 2nd level LANGE FM	Norsk Hydro Produksjon AS
6507/2-4	Marulk appraisal	2008	5685	365.00	3582	LYR FM	GAS COND DISCOVERY	LYSING FM	Eni Norge AS
6507/5-3	Ærfugl	2000	4059	417.00	2964	LYSING FM	GAS DISCOVERY	LYSING FM	BP Amoco Norge AS
6605/8-1	Stetind	2005	933	838.00	4990	LYSING FM	GAS DISCOVERY	1st level FANGST GP, 2nd level TILJE FM	Den norske stats oljeselskap a. s
6605/8-2	Stetind appraisal	2008	1076	818.00	4172	LANGE FM	DRY		Den norske stats oljeselskap a. s
204/26A-1	N/A	1995	NA	632.00	2627	Neptune sst	DRY		
206/5a-3	Fulla	2011	NA	128.30	2350	Clair Fm	OIL DISCOVERY		Faroe Petroleum

206/10a-1	Freya	1980	NA	131.00	2964	Clair Fm	OIL DISCOVERY		Faroe Petroleum
206/3-1	N/A	1984	NA	291.00	4905	N/A	DRY		
206/4-1	Loch Lomand	1996	NA	204.00	4109	N/A	DRY		
206/4-2	Edradour	2010	NA	297.00	3754	Smith Bank sst	GAS DISCOVERY		Total
206/11-1	Crastor	1977	NA	236.00	4620	N/A	DRY		
214/9-1	Bunnehaven	2001	NA	1556.00	4717	N/A	GAS DISCOVERY		

3 Geological and geophysical studies

Work performed in the licence was focused on prospect evaluation and maturation of the Fearless prospect and the Echoes and San Tropez leads. A complete remapping of the licence area on basis of the new AMS20_TGS20M04 PSTM & PSDM seismic survey was carried out. The results were integrated with results from geological and geophysical analysis and studies (see below). The PL1057 geophysical and geological studies work can be split in the following phases:

Geological studies

1. Sand provenance study performed by Vestfonna Geophysical. Provenance studies to identify sand source areas and directions and hence, evaluate the source to sink system during the deposition of the Cretaceous sandstones in the area (Fig. 3.1).
2. Reservoir properties study by Maast Geoservices and in-house. Petrographic study to evaluate the reservoir properties in cored sections of the Cretaceous (and Paleocene interval) (Fig. 3.2).
3. Facies analysis of analogue wells. Evaluation of all wells penetrating the Cretaceous in the area for reservoir presence and properties based on cuttings information from the Released Wells Initiative (RWI). Core description, depositional model and petrography study was performed using in-house resources (Fig. 3.3). No cores from the Lysing Formation are available in the study area. Cores from the Springar, Nise and Kvitnos formations display open marine shelfal VF-sands and shales with relatively poor reservoir qualities. Provenance studies suggest that the Echoes prospect could be located in a more favourable position (more proximal and potentially coarser grained sands) with regard to reservoir properties as compared to cored intervals.
4. Basin modelling, geochemical analysis of well samples. Geochemical analysis of well samples to investigate the petroleum system and the source rock potential in the area.
5. Regional Cretaceous source rock study by GEUS.

Geophysical studies

1. Seismic acquisition, reprocessing and interpretation. Mapping of seismic attribute anomalies.
2. Detailed seismic re-mapping of several key horizons on the AM20 TGS20M04 3D seismic data shown in Table 3.1.
3. Full seismic attribute analysis where performed on Top Springar, Nise, Lysing and Lange gridded surfaces. Surface attributes were generated in Petrel from the standard Full Fold, Near, Mid, FarMid, Far and Ultrafar PSDM processed offset cubes.

Table 3.1 Mapped Horizons

Horizon	Seismic	Domain
Sea Bed	AMS20_TGS20M04_FINAL_FULL_PRCMIG_AM20_T	Time
Top Brygge Fm	AMS20_TGS20M04_FINAL_FULL_PRCMIG_AM20_T	Time
Top Tang Fm	AMS20_TGS20M04_FINAL_FULL_PRCMIG_AM20_T	Time
Top Egga Mbr	AMS20_TGS20M04_FINAL_FULL_PSDM_AM20_T	Time
Top Springar Fm	AMS20_TGS20M04_FINAL_FULL_PSDM_AM20_T	Time
Top Nise Fm	AMS20_TGS20M04_FINAL_FULL_PSDM_AM20_T	Time
Top Lysing Fm	AMS20_TGS20M04_FINAL_PSDM_FARANG_AM20_T	Time
Top Lange Fm	AMS20_TGS20M04_FINAL_PSDM_FARANG_AM20_T	Time
BCU	MNR 2 lines and AMS20_TGS20M04_FINAL_FULL_PRCMIG_AM20_T	Time

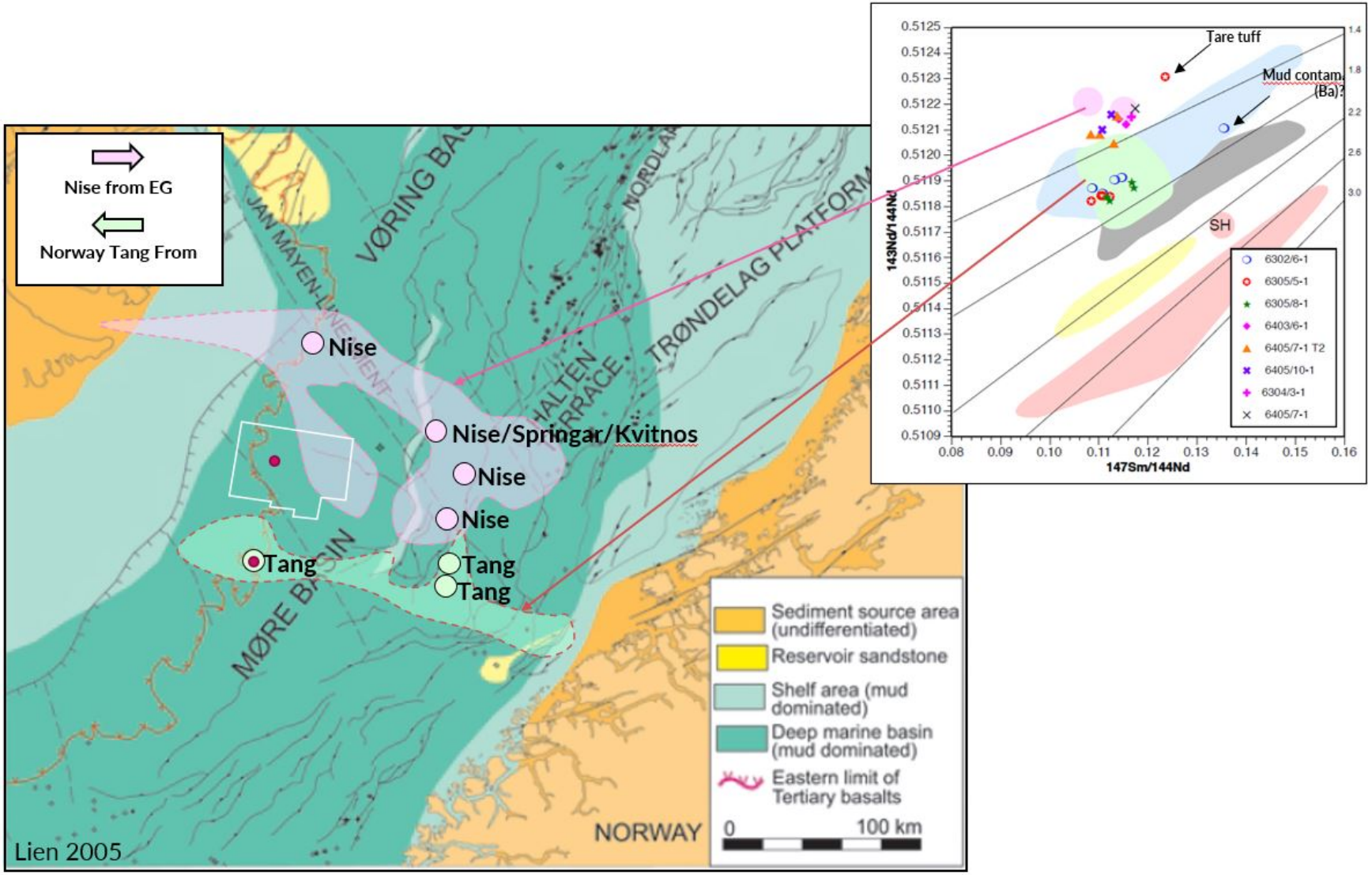


Fig. 3.1 Provenance systematics from Sm/Nd-isotope data. *Upper right: Sm/Nd-isotope data display two different populations for the Nise Fm and Egga Mbr (Tang Fm) sandstones. This reflects a westerly source area for the Nise sands and an easterly source area for the Egga sands.*

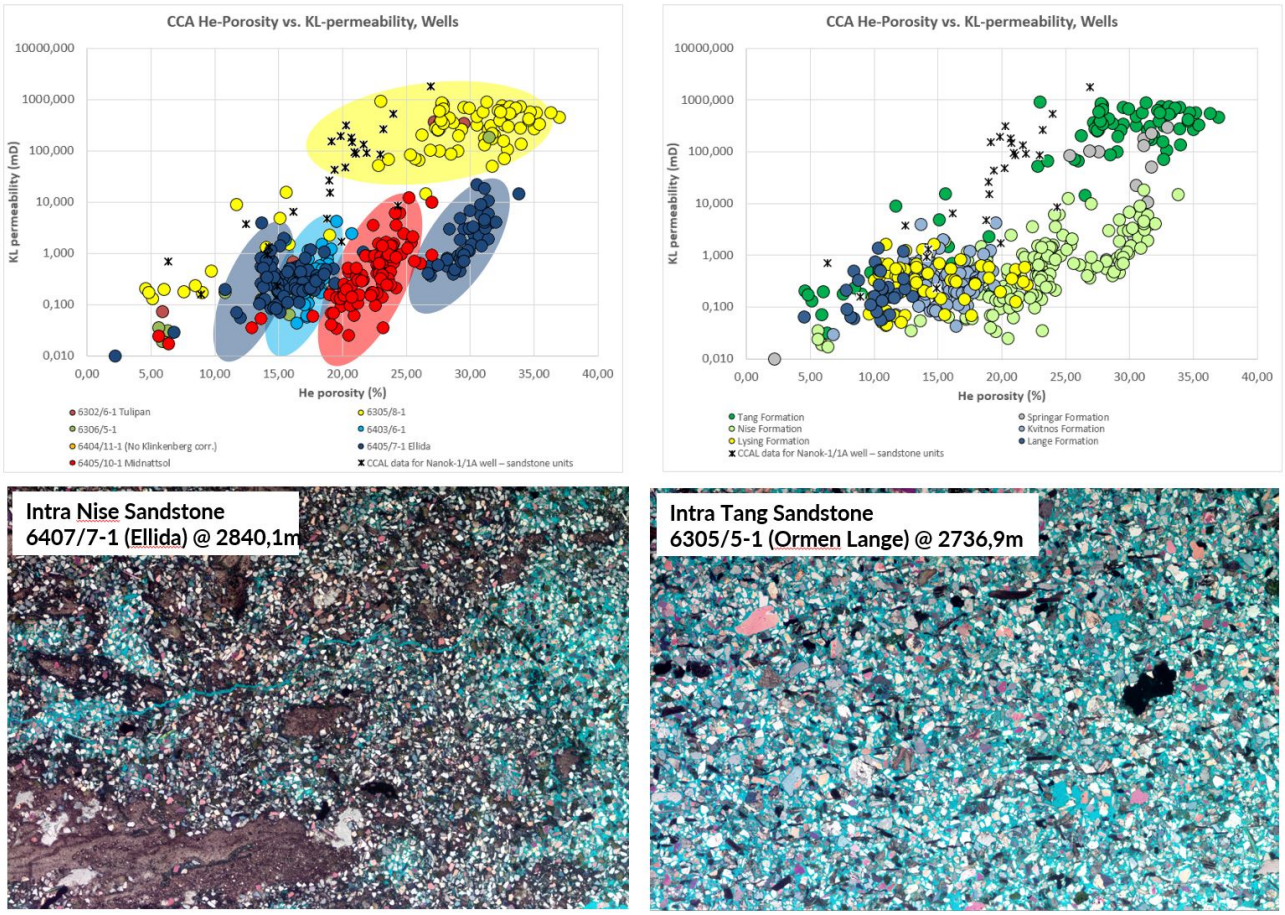


Fig. 3.2 Reservoir properties of Cretaceous compared to Tertiary rocks. *Upper: CCA plots illustrating the different measured por/perm relationships in the Cretaceous and Paleocene cored sections in the region. The Cretaceous sands display two orders of magnitude lower permeability compared to the Egga sands in the Ormen Lange area. Also note the different porosity regimes in the different wells in the Cretaceous sands. Lower left: Example micrographs from Intra Nise Sandstone (6407/7-1 Ellida). Lower right: Egga Mbr sandstone (6305/5-1 Ormen Lange). Summary from the petrographic study shows that Intra Nise Sandstone from 6405/7-1 Ellida, 6403/6-1 Edvard & 6405/10-1 Midnattsol) comprise heterolithic sediments with fine/ very fine sand, high detrital clay content and occasional glauconite grains with poor reservoir quality.*

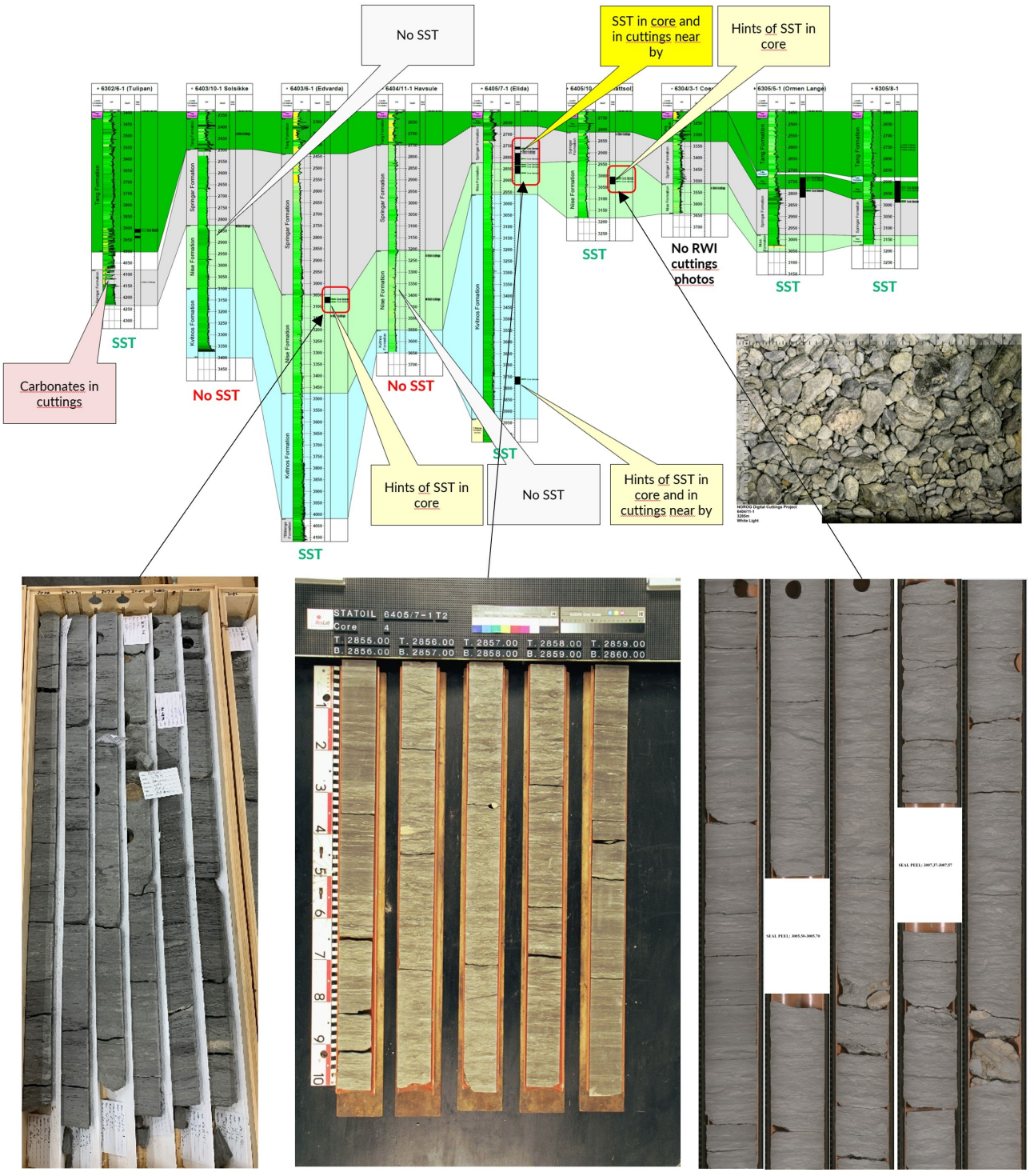


Fig. 3.3 Evaluation of analogue wells display limited sand potential in the Cretaceous interval. *A study of all the wells in and around the licence area reveals a limited potential of reservoir grad sandstone in the upper Cretaceous interval. There are hints of sand seen in photos of cuttings and in core. The best example is seen in the 6405/7-1 Ellida well where fine-grained sandstones are present. There is no clear connection seen on petrophysical logs to separate these identified sands from shales.*

The main implications from the G&G studies are:

- No significant amplitude support was identified at top Blålange Formation for the Fearless prospect.
- An amplitude response is seen on top Nise Formation, strengthening the Echoes lead which has been elevated to prospect status. Volumes are potentially significant, although with a very high risk.
- The implications from provenance data is that the potential sands in the Nise Formation reservoir in the Echoes prospect are derived from the west. This implies that the reservoirs properties seen in Nise Fm in wells located eastward from PL1057, such as 6405/10-1 Midnattsol and 6405/7-1 Ellida, would be poorer compared to what is expected in Echoes, i.e. they are located depositionally more distal than Echoes.

4 Prospect update

The APA2019 application identified one prospect, Fearless and three leads, Seamus, Echoes and San Tropez. Fearless was a structural mega-closure consisting of several large fault-bounded sub-structures, expected to contain submarine slope fan turbiditic sands shed from the western part of proto-Greenland in the Coniacian (Upper Cretaceous Lysing Eq.). The mega-closure was tested by the 6403/10-1 (Solsikke) well which proved dry at Nise Formation level. The well terminated within the Nise Formation and hence Lysing remained untested. Critical factors for the prospect were stratigraphic seal, reservoir properties and source rock presence. Potential source rocks were Lower/Upper Cretaceous (Barremian/Turonian) and Upper Jurassic (Kimmeridgian age) marine shales. Top seal was Coniaician-Santonian shales. Expected HC phase was gas with condensate mainly derived from the Spekk Formation. Main risks were trap definition to west and reservoir quality.

Several leads were also identified in the APA2019 evaluation; Seamus within the Lysing Formation, Echoes within the Nise Formation and San Tropez, a rotated Jurassic fault block located in the western part the licence area. The Seamus and San Tropez leads have been downgraded due to the lack of amplitude support in the new seismic data and will not be further assessed here. Table 4.1 and Fig. 4.1 show the APA2019 resource potential, whereas Fig. 4.2 shows an interpreted cross-section through PL1057.

Table 4.1 NPD Table 2 from the Apa 2019 application

Discovery/Prospect/Lead name [1]	D/P/L [2]	Case (Oil/Gas/Oil&Gas) [3]	Unrisked recoverable resources [4]						Probability of discovery [5] (0.00 - 1.00)	Resources in acreage applied for [%] [6] (0.00 - 100.0)	Reservoir		Nearest relevant infrastructure [8]	
			Oil [10^6Sm^3] (>0.00)			Gas [10^9Sm^3] (>0.00)					Litho-/ Chrono-stratigraphic level [7]	Reservoir depth [m MSL] (>0)	Name	Km (>0)
			Low (P90)	Base (Mean)	High (P10)	Low (P90)	Base (Mean)	High (P10)						
Fearless	P	Gas	0.10	13.47	40.70	1.30	179.00	541.00	0.11	100.0	Lysing / Coniancian	3570	Ormen Lange	118
Echoes	L	Gas								95.0	Nise / Campanian	3150	Ormen Lange	100
Seamus	L	Gas								100.0	Lysing / Coniancian	4105	Ormen Lange	100
San Tropez	L	Gas								50.0	Fangst & Båt / Mid-Low Juras.	3950	Ormen Lange	150

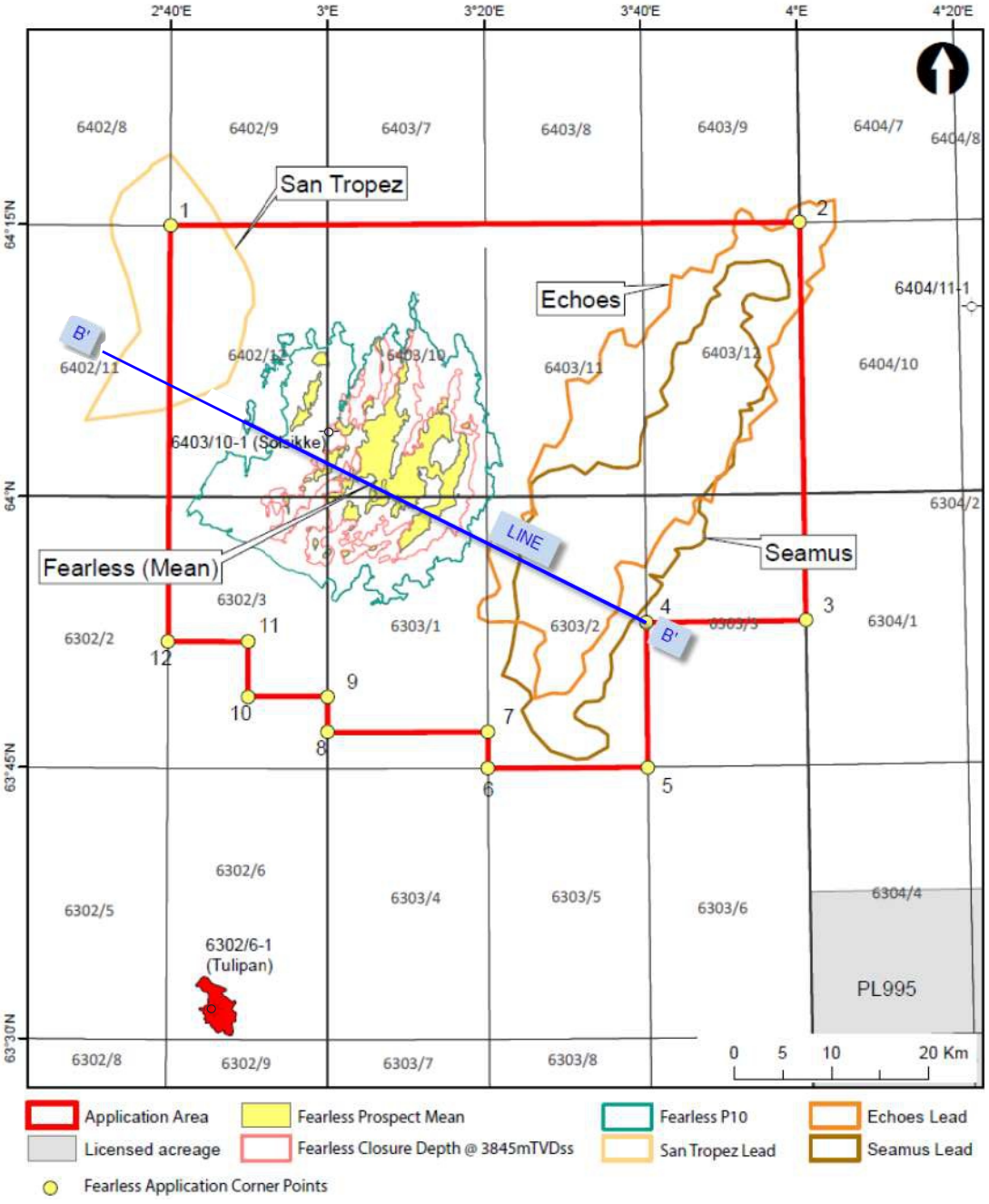


Fig. 4.1 Prospects and leads from APA 2019.

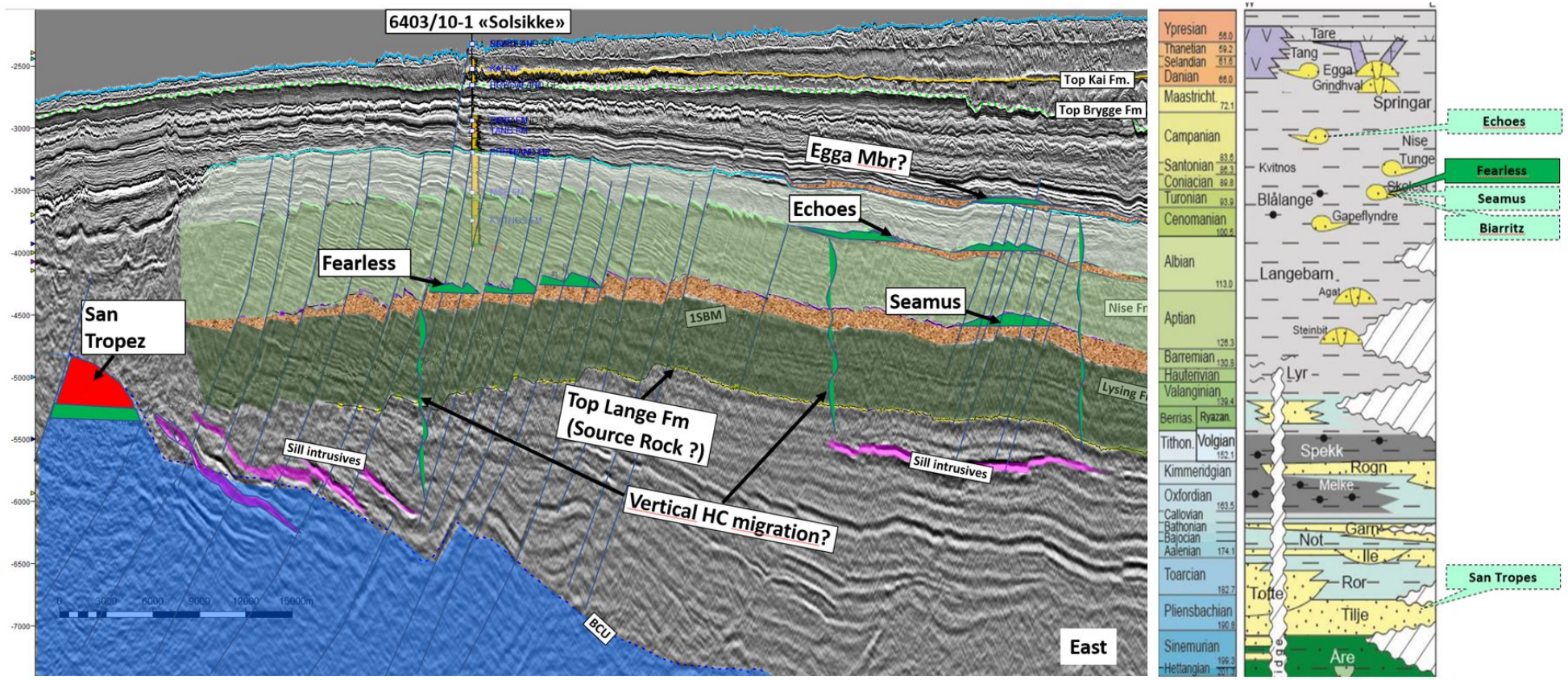


Fig. 4.2 Interpreted cross-section displaying the main prospectivity in the PL1057 license. *Left: W-E Interpreted seismic section displaying the stratigraphic location of the Fearless and Echoes prospects and the San Tropez lead, and main geological features. Right: Lithostratigrapy of the Southern Norwegian Sea (after Gradstein et al, 2019). Location of cross-section shown in B'-B' in Fig. 4.1.*

4.1 Fearless Lead (downgraded from prospect in the APA 2019)

The Fearless Prospect was identified as a complex trap with a 4-way dip closure at Top Blålange Formation (Fig. 4.3). The prospect closure is dessicated by several SW-NE trending normal faults with a stratigraphic component related to deep marine fan fairways identified from seismic attribute anomalies. The top seal is provided by the shales of the Kvitnos Formation. The source was expected to be the upper Jurassic Spekk Formation which is gas-prone at prospect location, with minor contribution from possible Barremian and Turonian source rocks (oil-prone at prospect location) (Fig. 4.4). No amplitude support is seen at Top Blålange Formation level in the acquired 3D seismic data to support gas-filled reservoirs in the objective section in the Fearless Prospect. With gas from Spekk and Lange Formations as the expected fluid type in the licence area for the Lysing level Fearless Prospect, gas should be seismically visible. Analysis of cores and cuttings from the nearest wells did not prove any good indications of migrated hydrocarbons.

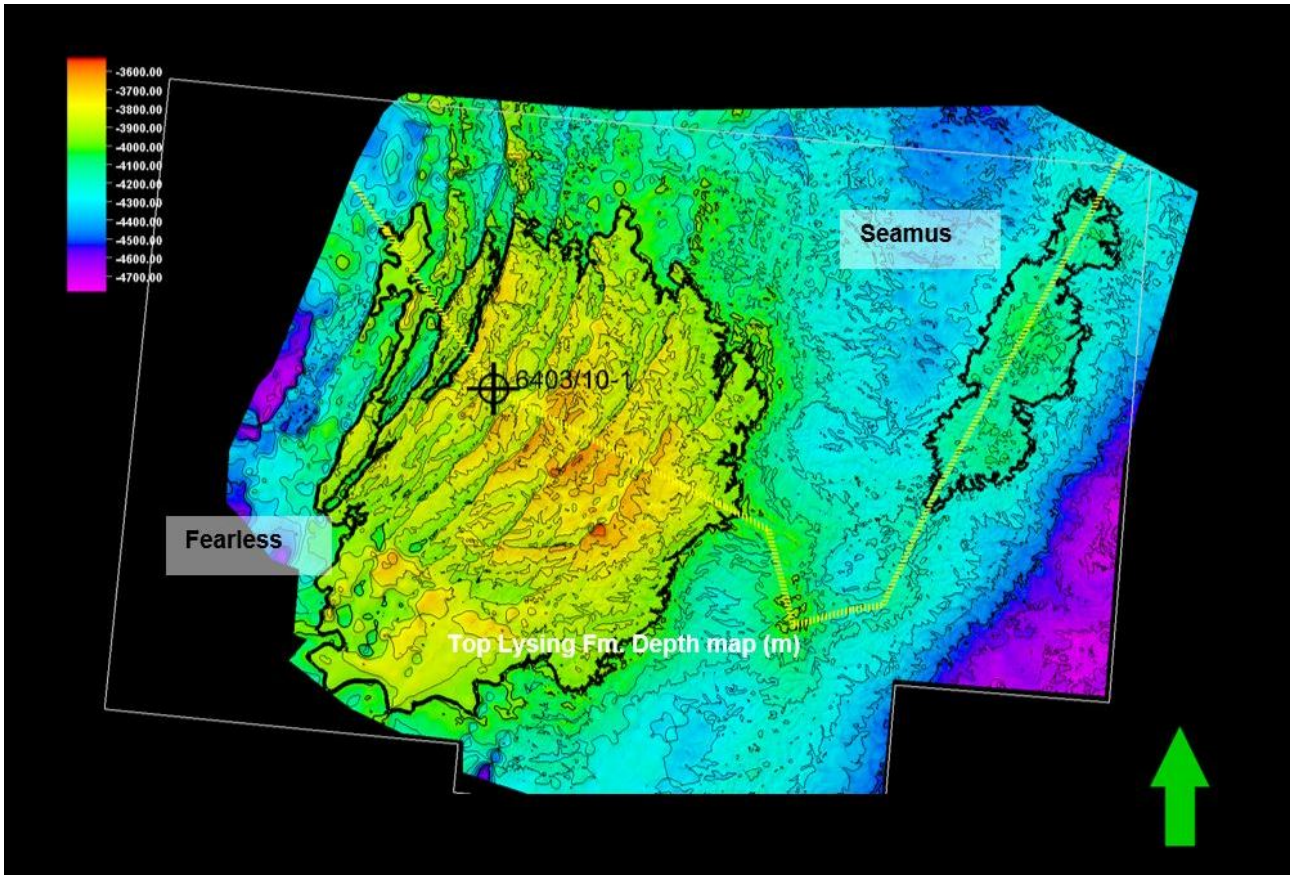


Fig. 4.3 Fearless depth map. *Depth map showing the Fearless and Seamus closures at Top Blålange Formation, as seen in the AMS20_TGS20M04 PSDM 3D seismic data.*

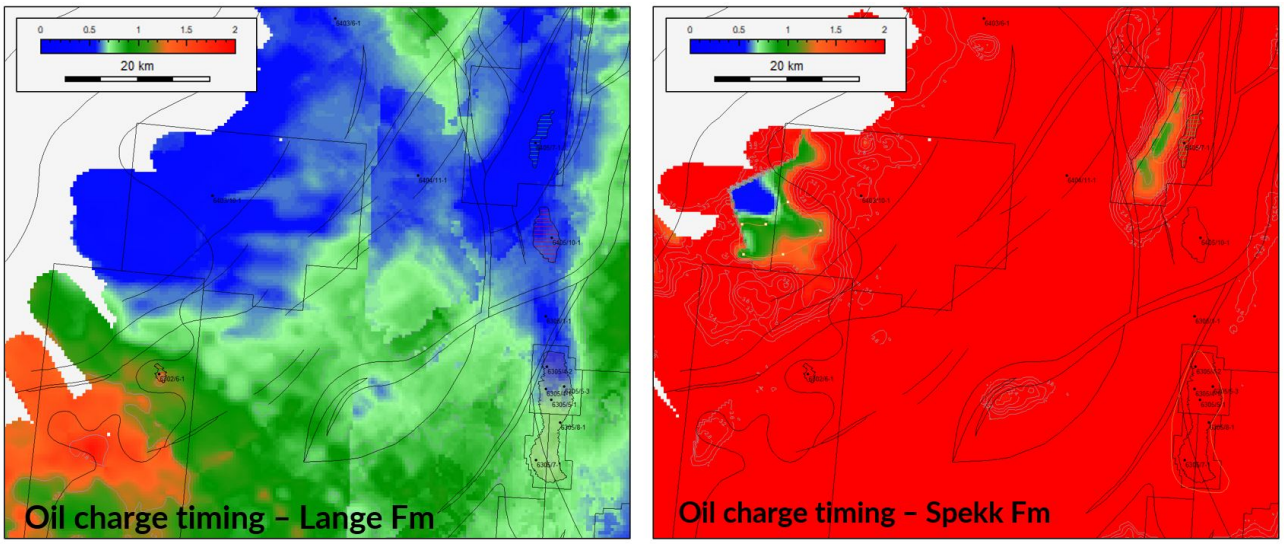


Fig. 4.4 Regional hydrocarbon maturity maps. *Left: Depth map showing maturation at top Lange Formation (Intra Blålange Formation) level (Cenomanian). Right: depth map showing maturation on top Spekk Formation level.*

4.2 Echoes Prospect (uplifted from lead in the APA 2019)

The Echoes Prospect is an upper Cretaceous (Cenomanian) Nise Formation shallow marine sandstone prospect (lead in the APA2019 application) identified on an amplitude anomaly in the eastern part of PL1057 licence area. The prospect has an approximate closure of 91 km2 (P50) (Fig. 4.5) and is based on a strong, soft amplitude anomaly which is in part conformable with depth. Spill route is suggested towards Fearless structure with a south-westerly spill point of the Echoes structure. The thickness of the reservoir is interpreted from the depth converted "thickness" of the Nise Formation and the Nise Formation seismic anomalies with P50 OWC at 3282 +/- 30m, i.e 3252m (P90), 3312m (P10). Volumes are presented in Fig. 4.6.

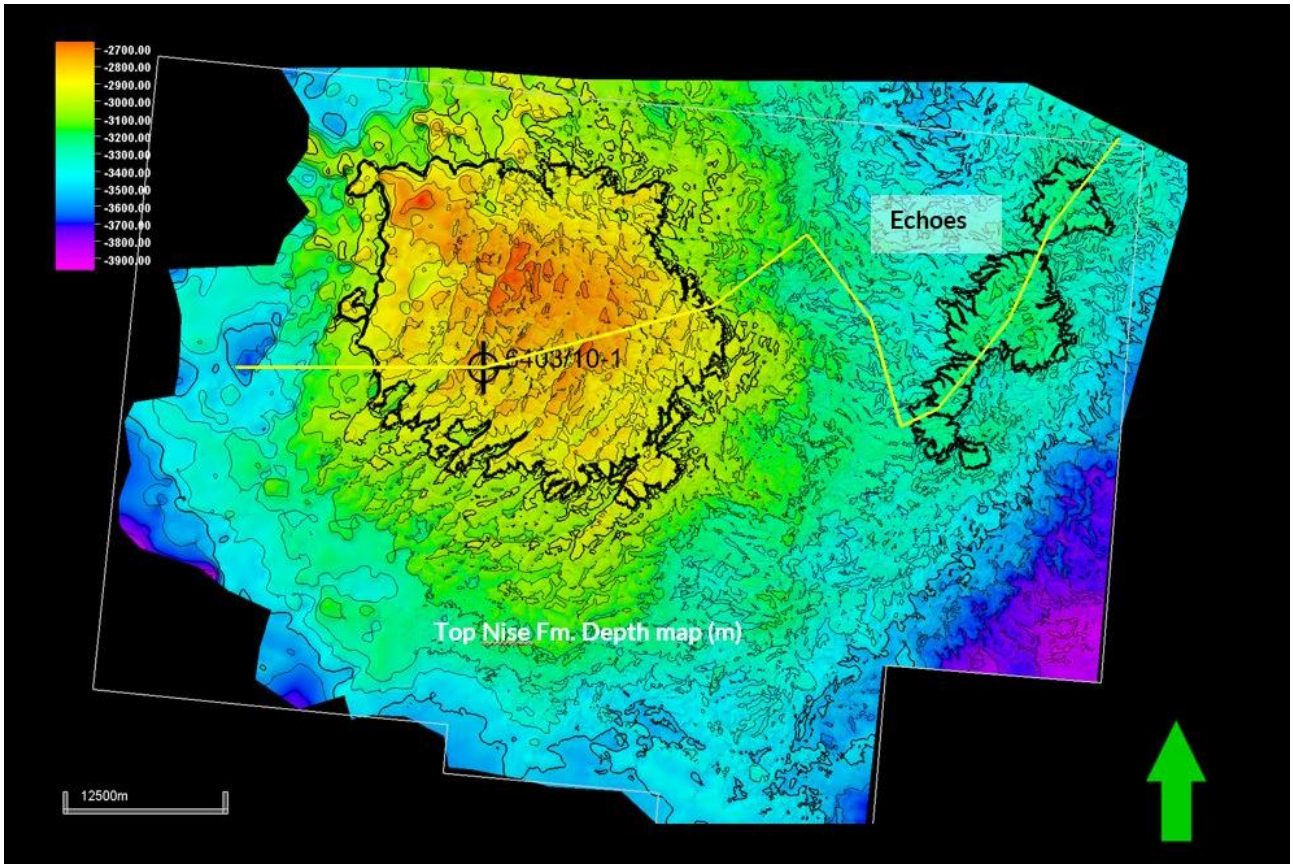


Fig. 4.5 Echoes depth map. *Depth map showing the Echoes (and Fearless) closures at top Nise Formation level.*

The main uncertainties are reservoir quality and source rock presence. The highest risk is the presence of reservoir grade sands which has thus far not been identified in the area. Offset wells at similar depth have only marginal reservoir quality with limited net-to-gross (NTG) linked to below-cut-off permeabilities. The anomaly identified on amplitude maps is interpreted as an oil case as the anomaly is regarded as not strong enough to represent a gas fill. The second major risk is therefor the presence of a Cretaceous source rock for generating oil in the area. There are observations of a soft amplitude response Intra Blålange Formation which may represent potential source rocks in this interval (Fig. 4.2), however no AVO analysis has been performed to prove this. There are no proven Cretaceous source rocks in the area, but Cretaceous oil is identified in both Ellida discovery (6405/7-1) and in an East Greenland cored well (Nanook-1). Volume calculations are based on Bo and GOR values taken from the Ellida discovery to the east of our licence which contains Cretaceous oil.

Block	6403/12	Prospect name	Echoes	Discovery/Prosp/Lead		Prosp ID (or New!)	NPD will insert value	NPD approved (Y/N)	
Play name	NPD will insert value	New Play (Y/N)		Outside play (Y/N)					
Oil, Gas or O&G case:	Oil	Reported by company		Reference document				Assessment year	
This is case no.:		Structural element	Møre Basin	Type of trap	1.2 Anticlinal traps	Water depth [m MSL] (>0)	~1600 - 1800	Seismic database (2D/3D)	3D
Resources IN PLACE and RECOVERABLE		**Main phase**				**Associated phase**			
Volumes, this case		Low (P90)	Base, Mode	Base, Mean	High (P10)	Low (P90)	Base, Mode	Base, Mean	High (P10)
In place resources	Oil [10^6 Sm^3] (>0.00)	44,56	67,82	74,59	109,33				
	Gas [10^9 Sm^3] (>0.00)					1,30	1,96	2,18	3,16
Recoverable resources	Oil [10^6 Sm^3] (>0.00)	16,71	26,47	30,15	46,10				
	Gas [10^9 Sm^3] (>0.00)					0,41	0,71	0,89	1,46
Reservoir Chrono (from)	Campanian	Reservoir litho (from)	Nise Fm	Source Rock, chrono primary	Campanian	Source Rock, litho primary	Lange Fm	Seal, Chrono	Turonian
Reservoir Chrono (to)	Campanian	Reservoir litho (to)	Nise Fm	Source Rock, chrono secondary	Kimmeridgian	Source Rock, litho secondary	Spekk Fm	Seal, Litho	Kvitnos Fm
Probability [fraction]									
Technical (oil + gas + oil & gas case) (0.00-1.00)	0,07	Oil case (0.00-1.00)	0,07	Gas case (0.00-1.00)	0,00	Oil & Gas case (0.00-1.00)	0,00		
Reservoir (P1) (0.00-1.00)	0,30	Trap (P2) (0.00-1.00)	0,90	Charge (P3) (0.00-1.00)	0,27	Retention (P4) (0.00-1.00)	1,00		

Parametres:	Low (P90)	Base	High (P10)	*Comments:*
Depth to top of prospect [m MSL] (> 0)	3132	3147	3162	
Area of closure [km^2] (> 0.0)	81,1	118,0	154,9	*Mean values have here been used as the base case for the input parameters.*
Reservoir thickness [m] (> 0)	124,3	150,0	175,7	
HC column in prospect [m] (> 0)	131	128	125	*In the petrophysical evaluation of the reservoir parameters for the reference wells, the Thomas Stieber (1975) method was utilised for most of the wells. This method utilises cut-offs for net res fraction and porosity. (Net res fraction is the fraction of the desired facies that is of reservoir quality; net reservoir rock/ net sand).*
Gross rock vol. [10^9 m^3] (> 0.000)	2,186	3,468	4,828	
Net / Gross [fraction] (0.00-1.00)	0,25	0,30	0,35	*Gross rock volume is calculated down to the maximum spill point.*
Porosity [fraction] (0.00-1.00)	0,17	0,20	0,23	
Permeability [mD] (> 0.0)	0,6	2,6	5,3	
Water Saturation [fraction] (0.00-1.00)	0,45	0,40	0,35	
Bg [Rm3/Sm3] (< 1.0000)				
1/Bo [Sm3/Rm3] (< 1.00)	0,74	0,71	0,68	
GOR, free gas [Sm^3/Sm^3] (> 0)				
GOR, oil [Sm^3/Sm^3] (> 0)	27	29	31	
Recov. factor, oil main phase [fraction] (0.00-1.00)	0,35	0,40	0,45	
Recov. factor, gas ass. phase [fraction] (0.00-1.00)	0,27	0,40	0,53	*Retention (P4) after accumulation, is part of the trap risk.*
Recov. factor, gas main phase [fraction] (0.00-1.00)				
Recov. factor, liquid ass. phase [fraction] (0.00-1.00)				For NPD use:

Temperature, top res [°C] (>0)			Innrapp. av geolog-init:	NPD will insert value	Registrert - init:	NPD will insert value	Kart oppdatert	NPD will insert value
Pressure, top res [bar] (>0)			Dato:	NPD will insert value	Registrert Dato:	NPD will insert value	Kart dato	NPD will insert value
Cut off criteria for N/G calculation	1.	2.	3.				Kart nr	NPD will insert value

Fig. 4.6 NPD table 4 (Echoes Prospect).

5 Technical economical evaluation

No technical economical evaluation regarding a possible development of the Echoes Prospect has been performed. The identified volume potential is large, however with significant geological risks (7% COS).

6 Conclusion

Following a full G&G evaluation, the main prospect from the APA19 application (Fearless Prospect) has been severely downgraded. The amplitude anomalies seen on the Lysing level on seismic data available during the APA19 have been significantly weakened in the new 3D seismic data. There is no longer any evidence of seismic soft anomalies to support gas-filled reservoirs in the Fearless Prospect. Analysis of cores and cuttings from the nearest offset wells did not prove any good indications of migrated oil. Additional prospectivity in the licence has been evaluated. The Echoes Lead has been matured to prospect status. The reservoir in Echoes is on the Nise level and does display enhanced amplitude responses in the new 3D seismic data. The response may be interpreted to represent sand with a possible oil fill as it is too weak to represent a commercial gas filled reservoir. However, the risk associated with hydrocarbon source presence and reservoir presence/quality is considered to be very high (COS 7%). Prospect and leads identified in the PL1057 licence are shown in Fig. 6.1. A soft amplitude response on the Blålange Formation level directly underlying the Echoes Prospect may indicate the presence of a local Cretaceous oil-bearing source rock, but with limited thickness and limited lateral extent for significant hydrocarbon volume generation. Petroleum system analysis predicts oil as the expected fluid type generated from the potential Lange level. Regarding reservoir presence/quality, sands in the Nise level are from provenance studies interpreted to have been derived from the west (East Greenland). However, none of the local analogue wells including the 6403/10-1 (Solsikke) well drilled within the PL1057 licence block penetrating the Nise interval display any indications of reservoir quality sandstone. None of the other leads identified in the APA19 application have been matured to prospect status. The PL1057 partnership has unanimously decided to relinquish PL1057.

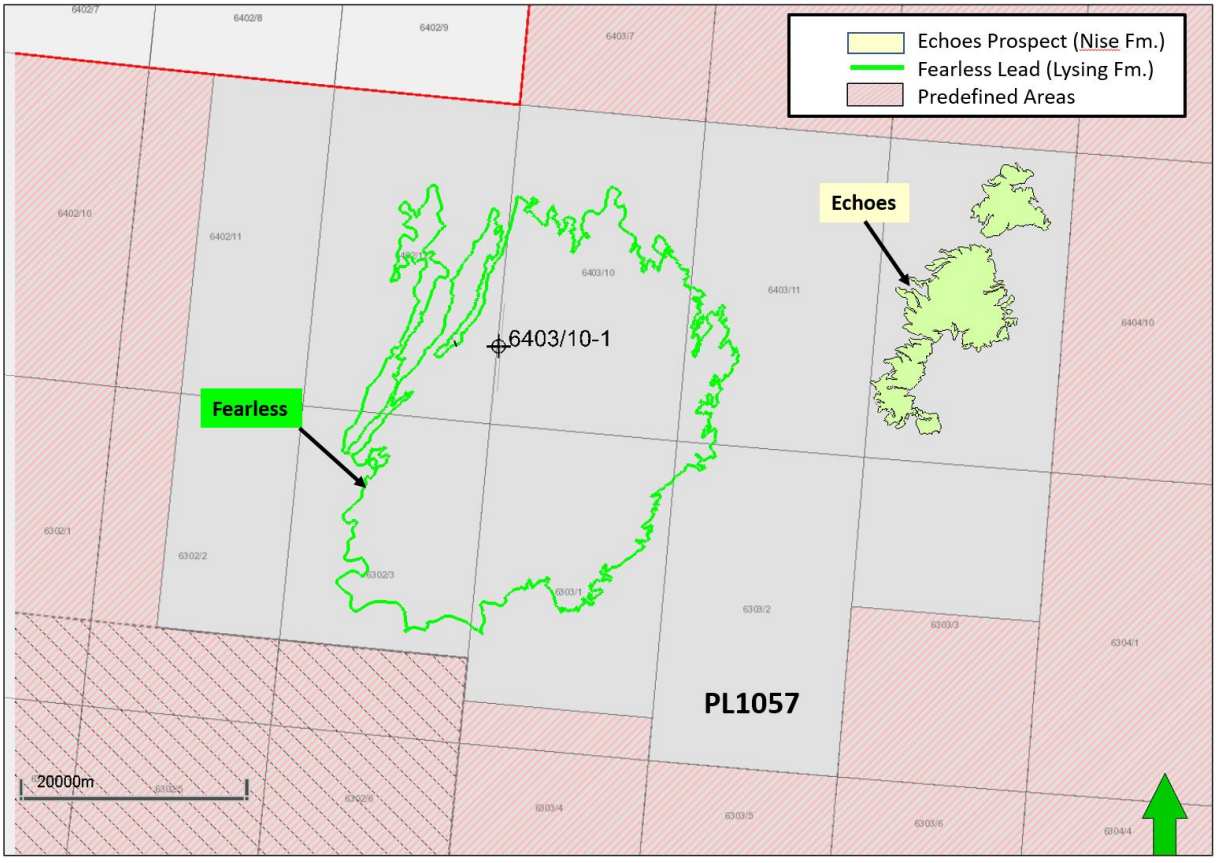


Fig. 6.1 PL1057 Updated prospects and leads.